BROOK COMMUNITY PRIMARY SCHOOL

Our Computing Curriculum

Intention:

Our vision for Computing is:

For all our pupils to have a growing understanding of the concepts of computer science and use this understanding to further learn and develop their knowledge and skills through the next step of their education and beyond

For all our pupils to become responsible, competent, confident and creative users of information and communication technology, keeping themselves and others safe - ***Care***

For all our pupils to become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world ***- Creativity***

Implementation: Every year, each class will learn a broad range of Computing skills and knowledge: understanding technology, coding for programs, the internet and networks. E-Safety plays an important role throughout the year as well as more focussed learning through internet and network topics. This element of the curriculum is supported through our PSHE/RHE curriculum too. We use the Purple Mash scheme but made adaptions where necessary, particularly in the pitch and expectation in upper KS2. We make links through our ***'echoes and ripples'*** looking back at prior learning and looking forward to future learning across the three areas of computing: ***computer science, information technology and digital literacy, as well as online safety.*** *******Online Safety is taught both explicitly as a unit each year as well as implicitly throughout all areas of the computing curriculum and the wider curriculum.

Within **Early Years,** key objectives are taught to prepare pupils for their KS1 learning, as well as ensure they have a secure understanding of online safety at an age-appropriate level.

Impact: Our pupils receive a high-quality computing education which equip them to use computational thinking and creativity to understand and change the world. Our pupils have the opportunity to gain skills in a variety of software and hardware and will have a deep understanding of e-safety and why this is important.

For progression of skills and vocabulary, see Purple Mash scheme of work.

Computing Curriculum Map

Year	Cycle	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
EYFS – specific taught objectives		*Know that mobile phones, tablets and computers all must be used safely and with permission from a grown up* *Follow and give simple instructions* *Engage with technology, such as online story books and music*					
SAPLINGS - Yr1&2	**Odd**	**2.2 Online safety*** *Digital Literacy* I know the consequences of not searching online safely. I can share work and communicate electronically – for example using 2Email or the display boards. I can report unkind behaviour and things that upset me online, to a trusted adult. I can see where technology is used at school such as in the office or canteen. **1.2 Grouping and sorting** *Information Technology* I can sort sound, pictures and text. I can name my work I can save my work. I can find my work.	**1.4 Lego builders** *Computer Science* I can explain that an algorithm is a set of instructions I can work out what is wrong when the steps are out of order in instructions I know that a computer program turns an algorithm into code that the computer can understand.	**1.5 Maze explorers** *Computer Science* I can explain that an algorithm is a set of instructions. I can work out what is wrong when the steps are out of order in instructions. I can make good guesses of what is going to happen in a program. For example, where the turtle might go.	**1.6 Animated story books** *Information Technology* I can add sound, pictures and text to a program such as 2Create a Story. I can change content on a file such as text, sound and images. I can name my work I can save my work. I can find my work.	**2.1 Coding** *Computer Science* *Information Technology* *Digital Literacy* I can explain an algorithm is a set of instructions to complete a task. I know I need to carefully plan my algorithm so it will work when I make it into code I can design a simple program using 2Code that achieves a purpose. I can find and correct some errors in my program. I can say what will happen in a program. I can spot something in a program that has an action or effect (does something). I understand that my creations such as programs in 2Code, need similar skills to the adult world. e.g. The program used for collecting money for school trips.	**2.3 Spreadsheets** *Information Technology* I can organise data – for example, using a database such as 2Investigate. I can name, save and find my work. **1.9 Tech outside of school** *Digital Literacy* I can say what technology is. I can say what examples of technology are in school and home I know that a chair uses old technology and a smart phone uses new technology.
	Even	**2.4 Questioning and effective searching** *Information Technology* I can organise data – for example, using a database such as 2Investigate. I can find data using specific searches – for example, using 2Investigate. I can use several programs to organise information – for example, using binary trees such as 2Question or spreadsheets such as 2Calculate. I can name, save and find my work.	**1.7 Coding** *Computer Science* *Information Technology* I know that a computer program turns an algorithm into code that the computer can understand. I can say that if something does not work how it should it is because my code is incorrect. I can try and fix my code if it isn't working properly I can make good guesses of what is going to happen in a program. For example, where the turtle might go.	**1.1 Online safety*** *Digital Literacy* I can keep my login information safe I can save my work in a safe place such as 'My Work' folder. **2.5 Effective Searching** *Information Technology* I can find data using specific searches – for example, using 2Investigate.	**2.6 Creating pictures** **2.7 Making music** *Information Technology* I can edit digital data such as data in music composition software like 2Sequence I can name, save and find my work. I can include photos, text and sound in my creations.	**1.8 Spreadsheets** *Information Technology* I can change content on a file such as text, sound and images. I can name my work I can save my work. I can find my work.	**1.3 Pictograms** **2.8 Presenting ideas** *Information Technology* I can change content on a file such as text, sound and images. I can name my work I can save my work. I can find my work. I can use several programs to organise information – for example, using binary trees such as 2Question or spreadsheets such as 2Calculate. I can name, save and find my work.

			I can change content on a file such as text, sound and images. I can name my work I can save my work. I can find my work.	I can find information I need using a search engine. I know the consequences of not searching online safely.			I can include photos, text and sound in my creations.
YOUNG OAKS - Yr 3&4	**Odd**	**3.1 Coding** *Computer Science* I can make a real-life situation into an algorithm for a program. I can design an algorithm carefully, thinking about what I want it to do and how I can turn it into code. I can identify an error in my program and fix it. I can experiment with timers in my programs. I can identify the difference in using between the effect of a timer or repeat command in my code I know that a variable stores information while a program is running (executing) I can identify 'If' statements, repetition and variables. I can read programs with several steps and predict what it will do.	**3.2 Online safety*** **3.3 Spreadsheets** *Digital Literacy* I can collect data and input it into software. I can analyse data using features within software to help such as, formula in 2Calculate (spreadsheets). I can present data and information using different software such as 2Question (branching database) or 2Graph (graphing tool). I can create purposeful (appropriate) content and attach this to emails. I can create a secure password. I can explain the importance of having a secure password and not sharing it with others. I can explain the negative consequences of not keeping passwords safe and secure. I understand the importance of keeping safe online and behaving respectfully. I can use communication tools such as 2Email respectfully and use good etiquette. I can report unacceptable content and contact online in more than one way to a trusted adult.	**3.4 Touch typing** *Information Technology* I can carry out searches to find digital content on a range of online systems, such as within Purple Mash or on an internet search engine. I can consider what the most appropriate software to use when given a task by my teacher. I can share digital content using a variety of applications such as: 2Blog, 2Email and Display Boards	**3.5 Email, including email safety** *Computer Science* *Information Technology* *Digital Literacy* I can identify different ways that the internet can be used for communication. I can use email such as 2Email to respond to others appropriately and attach files I can create purposeful (appropriate) content and attach this to emails. I can explain the importance of having a secure password and not sharing it with others. I can explain the negative consequences of not keeping passwords safe and secure. I can use communication tools such as 2Email respectfully and use good etiquette.	**3.6 Branching databases** **3.9 Presenting** *Information Technology* I can collect data and input it into software. I can analyse data using features within software to help such as, formula in 2Calculate (spreadsheets). I can present data and information using different software such as 2Question (branching database) or 2Graph (graphing tool). I can create purposeful (appropriate) content and attach this to emails.	**3.7 Simulations** **3.8 Graphing** *Information Technology* I can collect data and input it into software. I can analyse data using features within software to help such as, formula in 2Calculate (spreadsheets). I can present data and information using different software such as 2Question (branching database) or 2Graph (graphing tool). I can create purposeful (appropriate) content and attach this to emails.
	Even	**4.1 Coding** *Computer Science* *Information Technology* I can turn a real-life situation to solve into an algorithm, using a design that shows how I can accomplish this in code. I can use repetition in my code. For example, using a loop that continues until a condition is met such as the correct answer being entered. I can create and improve my solutions to a problem based on	**4.2 Online safety*** *Digital Literacy* *Computer Science* **4.3 Spreadsheets** *Information Technology* I understand that network and communication components can be found in many different devices which allow them to join the internet.	**4.4 Writing for different audiences** *Information Technology* I can work collaboratively to create content and solutions.	**4.5 Logo** *Computer Science* I can turn a real-life situation to solve into an algorithm, using a design that shows how I can accomplish this in code. I can read programs that contain several steps and predict the outcomes with increasing accuracy.	**4.6 Animation** *Information Technology* I can share digital content using a variety of applications such as: 2Blog, 2Email and Display Boards.	**4.7 Effective search** *Information Technology* **4.8 Hardware investigators** *Computer Science* I recognise the main component parts of hardware which allow computers to join and form a network. I understand that network and communication components can be found in many different devices

		feedback. For example, create a program using 2Code. I can use timers within my program designs more accurately to create repetition effects. For example, I can create a counting machine. I can use selection (decision) in my programming. For example, using an 'if statement' for a question being asked and the program takes one of two paths. I can use variables within my program and know how to change the value of variables. I can use the user inputs and output features within my program, such as 'Print to screen'. I can identify errors in my code by using different methods, such as steeping through lines of code and fixing them. I can read programs that contain several steps and predict the outcomes with increasing accuracy. I can review solutions that others have created, using a checklist of criteria.	I can create and improve my solutions to a problem based on feedback. For example, create a program using 2Code. I can review solutions that others have created, using a checklist of criteria. I have a good understanding of the online safety rules we learn at school. I can demonstrate how to use different online technologies safely. I can demonstrate how to use a few different online services safely I know I have a right to privacy both on and offline. I recognise that my wellbeing can be affected by how I use technology. I can report with ease any concerns with content and contact online and know immediate strategies to keep safe.				which allow them to join the internet. I understand the purpose of a search engine and the main features within it I can look at information on a webpage and make predictions about the accuracy of information contained within it. I can work collaboratively to create content and solutions.
MIGHTY OAKS – Yr5/6	**Odd**	**5.2 Online safety*** **5.5 Game creation** *Computer Science* *Information Technology* I can test and debug my programs as I work. I know the importance of computer networks and how they help solve problems and enhance communication. I recognise the main dangers that can be perpetuated via computer networks. I can explain what personal information is and know strategies for keeping this safe. I can use the most appropriate form of online communication according to the digital content. For example, use 2Email, 2Blog and Display Boards. I can search precisely when using a search engine. For example, I know I	**5.1 Coding** *Computer Science* *Information Technology* I can make more complex real-life problems into algorithms for a program. I can test and debug my programs as I work. I can convert (translate) algorithms that contain sequence, selection and repetition into code that works. I can use sequence, selection, repetition, and some other coding structures in my code I can organise my code carefully for example, naming variables and using tabs. I know this will help me debug more efficiently I can use logical methods to identify the cause of any bug with support to identify the specific line of code.	**Online research** **Search engines**	**5.4 Databases** *Information Technology* I can make appropriate improvements to digital work I have created. I can comment on how successful a digital solution is that I have created. For example, a program built in 2Code that sorts decimals numbers. I can work collaboratively with others creating solutions to problems using appropriate software such as 2Code.	**5.6 3D modelling** *Information Technology* I can make appropriate improvements to digital work I have created. I can comment on how successful a digital solution is that I have created. For example, a program built in 2Code that sorts decimals numbers. I can work collaboratively with others creating solutions to problems using appropriate software such as 2Code.	**5.7 Concept maps** *Information Technology* **Troubleshooting** I can use collaborative modes such as within 2Connect to work with others and share it. I can make appropriate improvements to digital work I have created. I can comment on how successful a digital solution is that I have created. For example, a program built in 2Code that sorts decimals numbers. I can work collaboratively with others creating solutions to problems using appropriate software such as 2Code.

		can add additional words or removes words to help find better results. I can explain in detail how accurate, safe and reliable the content is on a webpage. I have a secure knowledge of online safety rules taught at school I can demonstrate the safe and respectful use of different online technologies and online services. I always relate appropriate online behaviour to my right to have personal privacy. I know how to not let my mental wellbeing or others be affected by use of online technologies and services.					
	Even	**6.2 Online safety** *Digital Literacy* *Information Technology* **6.6 Networks** *Computer Science* I can explain the difference between the internet and the World Wide Web I can explain what a WAN and LAN is and describe the process of how access to the internet in school is possible. I can use filters when searching for digital content. I can explain in detail how accurate and reliable a webpage and its content is I can demonstrate safe and respectful use of a range of different technologies and online services. I can identify more discrete inappropriate behaviours online. For example, someone who may be trying to groom me or someone else I can use critical thinking to help me stay safe online. I know the value of protecting my privacy and others online.	**6.5 Text adventures** *Information Technology* I can consider the intended audience carefully when I design and make digital content. I can use criteria to evaluate the quality of my own and others digital solutions, suggesting refinements.	**6.1 Coding** *Computer Science* *Information Technology* I can turn a complex programming task into an algorithm I can identify the important aspects of a programming task (abstraction). I can decompose important aspects of a programming task in a logical way, identifying appropriate coding structures that would work. I can test and debug my program as I work on it and use logical methods to identify a cause of a bug. I can identify a specific line of code that is causing a problem in my program and attempt a fix I can translate algorithms that include sequence, selection and repetition into code and nest these structures within each other I can use inputs and outputs within my coded programs such as sound, movement and buttons and represent the state of an object I can interpret (understand) a program in parts and can make logical attempts to put the separate parts together in an algorithm to explain the program as a whole. I can compare a range of digital content sources and rate them in terms of content quality and accuracy.	**6.7 Binary** *Computer Science* I can consider the intended audience carefully when I design and make digital content. I can use criteria to evaluate the quality of my own and others digital solutions, suggesting refinements.	**5.3, 6.3, 6.9 Spreadsheets, formulae and data analysis** *Information Technology* I can use filters when searching for digital content. I can compare a range of digital content sources and rate them in terms of content quality and accuracy. I can consider the intended audience carefully when I design and make digital content. I can use criteria to evaluate the quality of my own and others digital solutions, suggesting refinements.	**6.4 Blogging** *Computer Science* *Digital Literacy* **6.7 Quizzing** *Information Technology* I can use inputs and outputs within my coded programs such as sound, movement and buttons and represent the state of an object I can explain the difference between the internet and the World Wide Web I can compare a range of digital content sources and rate them in terms of content quality and accuracy. I can consider the intended audience carefully when I design and make digital content. I can design and create my own online blogs. I can use criteria to evaluate the quality of my own and others digital solutions, suggesting refinements. I can demonstrate safe and respectful use of a range of different technologies and online services. I know the value of protecting my privacy and others online.

				I can consider the intended audience carefully when I design and make digital content. I can use criteria to evaluate the quality of my own and others digital solutions, suggesting refinements.			